Sugar-Sweetened Soft Drinks, Obesity, and Type 2 Diabetes

"One 12-ounce can of sugar-sweetened soda contains 150 calories and 40 to 50 grams of sugar. If these calories are added to a typical US diet with no offsetting reduction in other caloric sources, one can of soda per day can lead to a 15-pound weight gain in a year. A better mechanism for weight gain could not have been developed than introducing a liquid carbohydrate with calories that are not fully compensated for by increasing satiety. Liquid calories are a relatively new addition to the human diet—perhaps the human satiety circuit has not yet adapted to register these calories for what they are."

Caroline Apovian

Several studies have found an association between sugar-sweetened beverages and the incidence of obesity in children. But Dr. Apovian points to a research report published in the August 25, 2004, issue of the *Journal of the American Medical Association* that gives new evidence about weight gain and the risk of diabetes 2 from repeated consumption of sugar-sweetened fruit juices or soft drinks. "From a public policy perspective, this … should help to convince the U.S. Department of Agriculture to redefine guidelines for sugar consumption, especially in soft drinks," she says.

The study Apovian refers to was conducted as part of the ongoing Nurses Health Study II and analyzed data from more than 51,000 women who reported their consumption of sugar-sweetened beverages over a period of eight years, beginning in 1991. Researchers who received funding from the National Institute of Health explained their interest in developing data on consumption patterns in light of the fact that the prevalence of diabetes "has increased rapidly in the last decades, in parallel to the obesity epidemic." They theorized that since soft drinks are the leading source of added sugars in the U.S. diet, they may increase the risk of diabetes.

After controlling for known risk factors—women with a higher intake of sugar-sweetened soft drinks tended to be less physically active, for example, and to smoke more—the researchers found positive associations between sugar-sweetened beverage consumption and both greater weight gain and risk of type 2 diabetes. They concluded that "Public health strategies to prevent obesity and type 2 diabetes should focus on reducing sugar-sweetened beverage consumption."

The researchers pointed out that added sugar is as much a problem in sweetened fruit juices and punches as it is in soft drinks, though the study concentrated on soft drinks as the most frequently consumed beverages. Unsweetened fruit juices, on the other hand, did not appear to have the same bad effects.

What the study shows, Apovian says, is that "the government should support local efforts to banish soda machines from schools or replace soft drinks with healthier options (e.g., *not* sugar-sweetened fruit drinks). School programs can play an important role in preventing obesity. The food industry should cooperate by reducing the sugar load of their marketed beverages and by offering other, healthier beverages."

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